

Claims

- [c1] 1. An electrical connector for a coaxial cable with a solid outer conductor having annular corrugations alternating between a corrugation peak diameter and a corrugation bottom diameter, comprising:
- a connector body with a cylindrical outer conductor seat;
 - and
 - a sleeve with a cylindrical sleeve bore;
- the outer conductor seat having an outer seat diameter adapted to be greater than the corrugation bottom diameter;
- the sleeve bore having a sleeve diameter greater than the corrugation peak diameter;
- the outer seat diameter and the sleeve diameter dimensioned to create an interference fit when the outer conductor seat is inserted into the outer conductor and into the sleeve bore, pressing the outer conductor between the outer conductor seat and the sleeve bore.
- [c2] 2. The apparatus of claim 1, wherein the outer conductor annular corrugations are drawn into a cylindrical section as the outer conductor seat is inserted into the outer conductor and into the sleeve bore.

- [c3] 3.The apparatus of claim 1, further including a transition to a larger diameter which extends to a cable end of the sleeve bore.
- [c4] 4.The apparatus of claim 1, further including a connector body bore; the connector body bore coaxial with the sleeve bore and having an inner diameter substantially equal to the corrugation bottom diameter.
- [c5] 5.A connector in combination with an annular corrugated coaxial cable having a solid outer conductor with annular corrugations, comprising:
a connector body with an outer conductor seat; and
a sleeve with a sleeve bore;
an end portion of the outer conductor of the coaxial cable drawn into a cylindrical section and held by an interference fit between the outer conductor seat and the sleeve bore.
- [c6] 6.The apparatus of claim 1, further including a connector body bore; the connector body bore coaxial with the sleeve bore and having an inner diameter substantially equal to a minimum diameter of the annular corrugations.
- [c7] 7.A method for connecting a connector to a coaxial cable, comprising the steps of:

inserting an outer conductor of the coaxial cable through a sleeve bore of a sleeve;
flaring a cable end of the outer conductor;
pressing an outer conductor seat against the cable end of the outer conductor and into the sleeve bore trapping the outer conductor between the outer conductor seat and the sleeve bore.

[c8] 8.The method of claim 7, wherein the outer conductor trapped between the outer conductor seat and the sleeve bore is drawn into a cylindrical section.

[c9] 9.The method of claim 7 wherein the pressing is performed with a hydraulic press operating along a longitudinal axis of the coaxial cable.

[c10] 10.An electrical connector for a coaxial cable with a solid outer conductor, comprising:
a connector body with a cylindrical outer conductor seat;
and
a deformable crimp ring;
the outer conductor seat and the crimp ring adapted to receive a cylindrical section of the solid outer conductor between them and to retain the cylindrical section upon application of a compression force applied along a longitudinal axis of the coaxial cable between the connector body and the crimp ring.

- [c11] 11. The connector of claim 10, further including a connector body bore; the connector body bore coaxial with the outer conductor seat.
- [c12] 12. The connector of claim 11, further including a center contact positioned coaxially within the connector body bore.
- [c13] 13. The connector of claim 12, wherein the center contact retained by an insulator.
- [c14] 14. The connector of claim 13, wherein the insulator is formed by injection molding injected through at least one opening formed in the connector body.
- [c15] 15. The connector of claim 12, wherein the connector body and center contact are adapted to one of a BNC, Type N and DIN configuration.
- [c16] 16. A connector in combination with a coaxial cable having a solid outer conductor, comprising:
a connector body with an outer conductor seat; and
a deformable crimp ring;
an end portion of the outer conductor of the coaxial cable retained between the outer conductor seat and the deformable crimp ring.
- [c17] 17. The combination of claim 16, wherein the solid outer

conductor has annular corrugations; the annular corrugations having a cylindrical section at a peak of each corrugation.

[c18] 18.The combination of claim 16, wherein the cylindrical section has a length, along a longitudinal axis of the coaxial cable, at least four times a depth of the corrugations.

[c19] 19.The combination of claim 16, wherein the cylindrical section has a length, along a longitudinal axis of the coaxial cable, at least ten times a depth of the corrugations.

[c20] 20.The combination of claim 16, wherein the cylindrical section has a length, along a longitudinal axis of the coaxial cable, of at least 3 millimeters.

[c21] 21.The combination of claim 16, wherein the crimp ring and the solid outer conductor are formed from material(s) having a substantially equal thermal expansion coefficient.

[c22] 22.The combination of claim 16, further including a bore in the connector body coaxial with the outer conductor seat; and
a center contact retained in the bore by an insulator.

- [c23] 23. The combination of claim 22, wherein the insulator is an injection molded plastic; the plastic injected via at least one opening through the connector body to the bore.
- [c24] 24. A method for attaching a connector body to a coaxial cable having a solid outer conductor, comprising the steps of:
placing a crimp ring over an end of the solid outer conductor;
inserting a cylindrical section of the solid outer conductor over a conductor seat of the connector body;
applying axial compression between the connector body and the crimp ring to deform the crimp ring over the cylindrical section of the solid outer conductor and the conductor seat, thereby retaining the cylindrical section between the crimp ring and the conductor seat.
- [c25] 25. The method of claim 24, wherein the axial compression between the connector body and the crimp ring is applied upon a 360 degree periphery of the crimp ring.
- [c26] 26. The method of claim 24, wherein the axial compression applied to the crimp ring is via a die surface angled towards the coaxial cable.
- [c27] 27. The method of claim 24, wherein to apply the axial

compression, the connector body is positioned in a nest; and a segmented die applied to the crimp ring is held by a host die.

- [c28] 28. A coaxial cable, comprising:
a cylindrical solid outer conductor surrounding an inner conductor isolated from the solid outer conductor by a dielectric;
the solid outer conductor having annular corrugations with a cylindrical section at each corrugation peak;
the cylindrical section having a length, along a longitudinal axis of the coaxial cable, at least ten times a depth of the corrugations.
- [c29] 29. The cable of claim 28, wherein the cylindrical section has a length, along a longitudinal axis of the coaxial cable, of at least 3 millimeters.
- [c30] 30. The cable of claim 28, wherein the solid outer conductor is one of copper and copper alloy.